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The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 11

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte COLIN C. ISENMAN

Appeal No. 1996-1387
Application No. 08/110,269¹

ON BRIEF

Before MARTIN, LEE, and BARRY, Administrative Patent Judges.
BARRY, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the final rejection of claims 1-8 and 12-26. We affirm-in-part.

BACKGROUND

¹ The application was filed on August 23, 1993.

The invention at issue in this appeal relates to optical projection displays. A light source produces light, which is collimated by a lens. The collimated light is passes to a liquid crystal (LC) shutter. The incoming light is modulated by the LC shutter and projected onto a display screen. A matte surface and digitizing grid are carried by the screen. The surface acts as a diffusive element for displaying an image. The grid detects the position of a pointer near the screen.

Claim 23, which is representative for our purposes, follows:

23. An optical projection system, comprising:
- a) a liquid-crystal shutter, in which transmissivity of pixels is controlled by application of electric fields;
 - b) a light source for projecting light through the shutter;
 - c) a display screen on which the projected light produces an image; and
 - d) a plurality of conductors associated with the display screen, for use in detection of position of a stylus.

The references relied on in rejecting the claims follow:

Nakamura et al. (Nakamura) 1987	4,649,232	Mar. 10,
Naemura et al. (Naemura) 13, 1987	4,699,498	Oct.
Majima et al. (Majima) 1990	4,938,570	July 3,
Ogino et al. (Ogino) 1990	4,969,731	Nov. 13,
Bornhorst et al. (Bornhorst) 25, 1994.	5,282,121	Jan.

(filed Apr. 30, 1991)

Claims 1, 6, 12-15, 20, and 22-26 stand rejected under 35 U.S.C. § 103 as obvious over Majima in view of Naemura. Claims 2-4 stand rejected under § 103 over Majima in view of Naemura further in view of Ogino. Claims 5 and 16 stand rejected under § 103 over Majima in view of Naemura further in view of Bornhorst. Claim 7 stands rejected under § 103 over Majima in view of Nakamura. Claim 8 stands rejected under § 103 over Majima in view of Nakamura further in view of Ogino. Claims 17 and 18 stand rejected under § 103 over Majima in view of Ogino. Claims 19 and 21 stand rejected under § 103 over Majima in view of Bornhorst. Rather than repeat the arguments of the appellant or examiner in toto, we refer the reader to the briefs and the answers for the respective details thereof.

OPINION

In reaching our decision in this appeal, we considered the subject matter on appeal and the rejections and evidence advanced by the examiner. We also weighed the arguments of the appellant and examiner. After considering the entire record before us, we are persuaded that the examiner erred in

rejecting claims 2-4, 7, 8, 16, 20, 22, and 24. We are not persuaded, however, that the examiner erred in rejecting claims 1, 5, 6, 12-

15, 17, 18, 19, 21, 23, 25, and 26. Accordingly, we affirm-in-part.

We begin our consideration of the claims by finding that the references represent the level of ordinary skill in the art. See In re GPAC Inc., 57 F.3d 1573, 1579, 35 USPQ2d 1116, 1121 (Fed. Cir. 1995) (finding that the Board of Patent Appeals and Interference did not err in concluding that the level of ordinary skill in the art was best determined by the references of record); In re Oelrich, 579 F.2d 86, 91, 198 USPQ 210, 214 (CCPA 1978) ("[T]he PTO usually must evaluate ... the level of ordinary skill solely on the cold words of the literature."). Of course, every patent application and reference relies on the knowledge of persons skilled in the art to complement its disclosure. In re Bode, 550 F.2d 656, 660, 193 USPQ 12, 16 (CCPA 1977). Such persons must be presumed to know something about the art apart from what the references disclose. In re Jacoby, 309 F.2d 513, 516, 135 USPQ 317, 319 (CCPA 1962).

Next, we note that in rejecting claims under § 103, the patent examiner bears the initial burden of establishing a prima facie case of obviousness. A prima facie case is established when the teachings from the prior art would appear to have suggested the claimed subject matter to a person of ordinary skill in the art. If the examiner fails to establish a prima facie case, an obviousness rejection will be overturned. In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). With this in mind, we address claims 1, 5, 6, 15, 25, and 26; claims 2-4; claims 7 and 8; claims 12-14; claim 16; claims 17 and 18; claims 19 and 21; claim 20; claim 22; claim 23; and claim 24 seriatim.

Claims 1, 5, 6, 15, 25, and 26

Regarding claim 1, the appellant makes three arguments attacking the combination of Majima and Naemura. First, he argues that the examiner's reason for combining the references "is incorrect in its facts." (Appeal Br. at 8.) The examiner replies, "the appellant's argument is not persuasive because as described by Naemura, a response time is improved due to the shutter" (Examiner's Answer at 8.)

We find that the examiner had a sufficient reason for combining the references. Obviousness cannot be established by combining teachings of the prior art to produce a claimed invention absent a suggestion supporting the combination. In re Geiger, 815 F.2d 686, 688, 2 USPQ2d 1276, 1278 (Fed. Cir. 1987). The question is whether there is something in the prior art as a whole to suggest the desirability of making the combination. In re Rouffet, 149 F.3d 1350, 1355, 47 USPQ2d 1453, 1456 (Fed. Cir. 1998); In re Beattie, 974 F.2d 1309, 1311-12, 24 USPQ2d 1040, 1042 (Fed. Cir. 1992).

Here, the examiner identified a proper suggestion supporting the combination. Specifically, Naemura teaches reducing the response time of, i.e., increasing the speed of, an LC light shutter to less than 0.25 ms. Col. 2, ll. 49-53. Because improving response time is desirable, the teaching would have suggested the desirability of making the combination.

Second, the appellant argues that improving speed is irrelevant because his "claims do not recite speed." (Appeal

Br. at 8.) The examiner replies, "the appellant's argument is not persuasive because 'the speed' was motivation for combining the two references." (Examiner's Answer at 8.)

The appellant erred in construing the criteria for obviousness. Obviousness is not determined based on purpose alone. In re Graf, 343 F.2d 774, 777, 145 USPQ 197, 199 (CCPA 1965). It is sufficient that references suggest doing what an appellant did, although the appellant's particular purpose was different from that of the references. In re Heck, 699 F.2d 1331, 1333, 216 USPQ 1038, 1040 (Fed. Cir. 1983); In re Gershon, 372 F.2d 535, 539, 152 USPQ 602, 605 (CCPA 1967).

Here, Naemura suggests combining the references to obtain the claimed invention for the aforementioned reasons. The suggestion does not have to be the same as the appellant's.

Third, the appellant argues that combining Majima and Naemura renders the references inoperative or is contrary to their teachings. (Appeal Br. at 9-12.) The appellant also makes this argument regarding claim 6. (Id. at 12-13.) The

examiner replies, "the appellant's argument is not persuasive because Naemura's teaching of the shutter is combinable with Majima." (Examiner's Answer at 8.)

The appellant again erred in construing the criteria for obviousness. It is unnecessary that inventions of references be physically combinable to render obvious an invention under review. In re Sneed, 710 F.2d 1544, 1550, 218 USPQ 385, 389 (Fed. Cir. 1983). See also In re Nievelt, 482 F.2d 965, 968, 179 USPQ 224, 226 (CCPA 1972) ("Combining the teachings of references does not involve an ability to combine their specific structures."). The test for obviousness is not whether the features of a reference may be bodily incorporated into the structure of another reference but what the combined teachings of those references would have suggested to one of ordinary skill in the art. In re Keller, 642 F.2d 413, 425, 208 USPQ 871, 881 (CCPA 1981).

Here, the examiner does not assert that the features of Naemura may be bodily incorporated into the structure of Majima. Instead, he asserts that the combined teachings of

the references would have suggested to one of ordinary skill in the art the appellant's invention. The appellant erred in ignoring "the relevant combined teachings of the references." In re Andersen, 55 CCPA 1014, 391 F.2d 953, 958, 157 USPQ 277, 281 (CCPA 1968) (dismissing the argument that a combination would result in an inoperative structure). Therefore, we affirm the rejection of claims 1 and 6.

Regarding claim 5, the appellant merely argues, "[a]s discussed above, the combined references do not lead to claim 1, from which claim 5 depends. Claim 5 depends from an allowable claim." (Appeal Br. at 33.) In short, he relies on his arguments regarding claim 1. We rejected these arguments as aforementioned. Therefore, we affirm the rejection of claim 5.

The appellant neglects to address the rejection of claim 15. Accordingly, he has not shown error in the rejection. Therefore, we affirm the rejection of claim 15.

Regarding claims 25 and 26, the appellant merely states, "[t]he discussion above applies to claims 25 and 26." (Appeal

Br. at 27.) It is unclear to which of the discussions the appellant refers. We have rejected many of his arguments. Accordingly, the statement shows no error in the rejection. Therefore, we affirm the rejection of claims 25 and 26. Next, we address claims 2-4.

Claims 2-4

Regarding claims 2-4, the appellant argues, "Ogino's coolant **cools the wrong elements**. His coolant cools the Fresnel lens 15a and lens 36'. His coolant **does not cool the liquid crystal 10.**" (Appeal Br. at 35.) The examiner replies, "Ogino discloses a liquid crystal panel which is comprised of a coolant from [sic] removing heat from the liquid crystal (col. 9, lines 42 to 52)." (Examiner's Answer at 6-7.)

We cannot find that the combination of Majima in view of Nakamura further in view of Ogino teaches or would have suggested the coolant of claims 2-4. The claims specify in pertinent part a "coolant for removing heat from the shutter."

The examiner erred in determining the content of the prior art. As aforementioned, he asserts that Ogino teaches cooling a liquid crystal. It is true that the reference teaches the use of a coolant 39. The coolant is charged into a space between a lens element 36 and a Fresnel lens 15a. Col. 9, ll. 42-44. Rather than cooling a shutter as claimed, however, Ogino cools a Fresnel lens and lens element. The examiner has not recognized and accounted for the difference between cooling the reference's Fresnel lens and lens element and cooling the claims' LC shutter. Furthermore, the examiner has not identified a suggestion elsewhere in the prior art to cool the LC shutter.

For the foregoing reasons, the examiner has not established a prima facie case of obviousness. Therefore, we reverse the rejection of claims 2-4. Next, we address claims 7 and 8.

Claims 7 and 8

Regarding claims 7 and 8, the appellant argues, "'matte' means 'having a rough or granular surface.'" (Appeal Br. at

28.) He adds, "Nakamura is directly contrary." (Id.) The examiner replies, "regarding 'a tactile sensation during dragging', where can it be found in the claim. [sic]" (Examiner's Answer at 10.)

We cannot find that the combination of Majima in view of Nakamura teaches or would have suggested the matte surface of claim 7. The claim specifies in pertinent part a "screen upon which an image may be projected, comprising ... matte surface along which a user can drag a stylus."

The examiner erred by not identifying the limitation in the prior art. He admits, "Majima does not disclose the screen which is comprised of [sic] matte surface along which a user can drag a stylus" (Examiner's Answer at 4.) For its part, Nakamura teaches a graphics tablet with a surface 12 along which a user can drag a stylus 22. Col. 6, ll. 4-15. Because the surface is made of glass, (Id. at ll. 8-9), it would not necessarily be rough or granular. To the contrary, one of ordinary skill in the art would have expected it to be smooth, i.e., "as smooth as glass." The addition of Ogino in

the rejection of claim 8 does not cure this defect. For the foregoing reasons, the examiner has not established a prima facie case of obviousness. Therefore, we reverse the rejection of claims 7 and 8. Next, we address claims 12-14.

Claims 12-14

Regarding claims 12-14, the appellant makes two arguments. First, he argues, "it is impossible to substitute PDLIC into the other reference, Naemura, because of the opposite functioning of PDLIC." (Appeal Br. at 23.) The examiner replies, "since Majima as modified have [sic] disclosed the shutter which modulates light, having polymer-dispersed material would have been obvious because it would be an alternate material which the system may use for modulating light." (Examiner's Answer at 4.)

We agree with the examiner. Naemura discloses an image projector. A lamp 1 radiates light in the direction of a lens 2. The light is projected through an LC shutter 3, which modulates the incoming light. Col. 4, ll. 17-22. The reference does not limit the type of LC employed for the

shutter. Because it does not limit the type, one of ordinary skill in the art could have selected an LC from the available types.

Second, the appellant admits, "[a]t the time of filing of the application, PDLC was a commercially available product." (Appeal Br. at 23.) He argues, however, "commercial availability of PDLC on this date is not equivalent to availability **before** the filing date, as section 102(a) requires." (Reply Br. at 4.) The examiner replies, "since PDLC was commercially available at the time of the claimed invention was filed [sic] and that [sic] the appellant has not stated that PDLC is appellant's own product ... PDLC would have been obvious." (Examiner's Answer at 9.)

As aforementioned, the appellant admits that PDLC was commercially available as of the filing date of his application. Specifically, he admits that sheets of the material could be purchased from suppliers at the time. (Spec. at 7.) We find that PDLC's commercially availability as of the filing date gives rise to a rebuttable presumption

that the material existed and was known to one of ordinary skill in the art before the appellant's invention. The appellant has not rebutted the presumption with arguments or evidence. Therefore, we affirm the rejection of claims 12-14. Next, we address claim 16.

Claim 16

Regarding claim 16, the appellant argues, "Bornhorst's filter 32 does not 'receive infra-red light reflected **by said filter.**'" (Appeal Br. at 32.) The examiner replies, "the filter 32 of Bornhorst, which transmits, may read [sic] as reflecting." (Examiner's Answer at 11.)

We agree with the appellant. In short, claim 16 specifies a dichroic reflector, which is distinct from its infrared (IR) filter.

Bornhorst employs a dielectric interference filter 32 to filter energy in the "near" IR region before it reaches an LC layer 14. The interference filter is positioned between the

layer and a lamp 10. Col. 7, ll. 35-43. The examiner erred in reading both the dichroic reflector and the IR filter on the reference's interference filter. This is not permissible.

For the foregoing reasons, the examiner has not established a prima facie case of obviousness. Therefore, we reverse the rejection of claim 16. Next, we address claims 17 and 18.

Claims 17 and 18

The appellant neglects to argue the rejection of claim 17 and 18. Accordingly, he has not shown error in the rejection. Therefore, we affirm the rejection of claim 17 and 18. Next, we address claims 19 and 21.

Claims 19 and 21

Regarding claims 19 and 21, the appellant argues, "the references do not show IR-reflective coatings." (Appeal Br.

at 34.) The examiner replies, "since the claim is broad, prior art may read on the claim." (Examiner's Answer at 11.)

We agree with the examiner and address claims 19 and 21 seriatim. Claim 19 specifies in pertinent part "an infra-red reflective layer positioned adjacent the shutter, for reducing infra-red light reaching the shutter."

The appellant erred by reading the limitation of a coating into claim 19. Comparison of the combination to the claim language evidences that the references would have suggested an IR-reflective layer, which is positioned adjacent a shutter. As noted by the examiner, (Examiner's Answer at 5-6) and as aforementioned regarding claim 16, Bornhorst employs an interference filter to filter energy in the near IR region before it reaches an LC layer. The filter is positioned between the layer and a lamp. Figure 1 shows that the filter is located adjacent to the layer. The reference's interference filter teaches or suggests the claimed IR-reflective layer. Its location teaches or suggests the

claimed position. Therefore, we affirm the rejection of claim 19.

We agree with the appellant that the references do not show the IR-reflective coating of claim 21. The examiner's rejection, however, is based on obviousness rather than anticipation. The appellant has not explained why replacing Bornhorst's IR filter, which is beside an LC layer, with an IR-coating on the layer would not have been obvious. Accordingly, he has not shown error in the rejection. Therefore, we affirm the rejection of claim 21. Next, we address claim 20.

Claim 20

Regarding claim 20, the appellant argues, "[a] holographic diffuser must be shown in the prior art, together with a teaching for combining it with the references. Neither has been done." (Appeal Br. at 26.) The examiner replies, "the holographic diffuser would have been obvious because such diffuser is well known in the art to diffuse light." (Examiner's Answer at 4.)

We cannot find that the combination of Majima in view of Naemura teaches or would have suggested the holographic diffuser of claim 20. The claim specifies in pertinent part "[a] video display, comprising: a) an image generation system which includes ... a holographic diffuser associated with the screen"

The Examiner erred by not identifying a proper suggestion supporting the proposed addition of a holographic diffuser to the claimed combination of elements. Rather than providing a line of reasoning to explain why such an addition would have been desirable, he merely relies on the fact that the holographic diffuser was well known in the art. The fact that an element was well known, however, does not render its addition per se obvious as the examiner's rejection might imply. A suggestion of the desirability of using the element to modify references must be shown. The examiner did not show this.

For the foregoing reasons, the examiner has not established a prima facie case of obviousness. Therefore, we

reverse the rejection of claim 20. Next, we address claim 22.

Claim 22

Regarding claim 22, the appellant notes, "[n]o reason for rejection of claim 22 has been given" by the examiner.

(Appeal Br. at 24.) He argues, "[c]laim 22 does not read on the Office Action's combination of references." (Id. at 25.) The appellant explains, "Naemura specifically discloses polarizing filters." (Id.) The examiner fails to respond to this argument.

The Examiner erred by not explaining how the prior art would have suggested the limitations of claim 22. He has not established a prima facie case of obviousness. Therefore, we reverse the rejection of claim 22. Next, we address claim 23.

Claim 23

Regarding claim 23, the appellant merely states, "[t]he discussion above applies to claim 23." (Appeal Br. at 26.)

It is unclear to which of the discussions the appellant refers. We have rejected many of his arguments. Accordingly, the statement shows no error in the rejection. Therefore, we affirm the rejection of claim 23. Next, we address claim 24.

Claim 24

Regarding claim 24, the appellant argues, "the Office Action has not shown a device having no phase change."
(Appeal Br. at 27.) The examiner fails to respond to this argument.

The Examiner erred by not explaining how the prior art would have suggested the limitations of claim 24. He has not established a prima facie case of obviousness. Therefore, we reverse the rejection of claim 24.

We end our consideration of the claims by noting that the aforementioned affirmances are based only on the arguments made in the briefs. Arguments not raised in the briefs are not before us, are not at issue, and are thus considered waived.

CONCLUSION

To summarize, the examiner's rejection of claims 1, 5, 6, 12-15, 17, 18, 19, 21, and 23 under 35 U.S.C. § 103 is affirmed. His rejection of claims 2-4, 7, 8, 16, 20, 22, and 24 under § 103, however, is reversed.

No period for taking subsequent action concerning this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED-IN-PART

JOHN C. MARTIN)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JAMESON LEE)	APPEALS
Administrative Patent Judge)	AND
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